MONTHLY WEATHER REVIEW.

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INTRODUCTION.

This REVIEW contains a general summary of the meteorological conditions which prevailed over the United States and Canada during July, 1884, based upon the reports from the regular and voluntary observers of the Signal Service and co-operating state weather services.

Descriptions of the storms which occurred over the north Atlantic ocean during the month are also given and their approximate paths shown on chart i.

The number of atmospheric depressions, described under "areas of low barometer," is twelve, or three more than the average number for July during the eleven preceding years.

The month, as a whole, was remarkably cool, the temperature averaging below the mean over all the northern districts and in the Southern States east of the Mississippi river; the deficiencies were most marked from Dakota eastward to the lower lakes and in the northern plateau. Over the southwestern portion of the country, from the Mississippi to Arizona, and along the California coast the mean temperature was above the normal.

The rainfall was excessive on the Atlantic coast north of the Carolinas; in eastern Tennessee, the lower lake region, and in the Missouri and Arkansas valleys. It was below the average in the upper lake region, Ohio valley, and over all of the southern districts.

Drought prevailed in several states during the month, being most severe in Texas, where the rainfall for June also was deficient. The rains accompanying low area x. terminated the drought which prevailed in central Ohio previous to the 23d.

On the evening of the 3d a remarkably brilliant meteor was extensively observed, having been seen in Connecticut, New York, New Jersey, Pennsylvania, Virginia, and the province of Ontario, Canada.

The severest local storms of the month were associated with low areas iv.–v. and x.

In the preparation of this REVIEW the following data, received up to August 20th, 1884, have been used, viz.: the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and twenty-two Signal Service stations and fifteen Canadian stations, as telegraphed to this office; one hundred and fifty-eight monthly journals, and one hundred and fifty-four monthly means from the former, and fifteen monthly means from the latter; two hundred and fifty-nine monthly registers from voluntary observers; fifty-seven monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports, through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs, furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the local weather services of Alabama, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Nebraska, Ohio, and Tennessee, and of the Central Pacific railway company; trustworthy newspaper extracts; and special reports.

ATMOSPHERIC PRESSURE.

[*Expressed in inches and hundredths.*]

The mean atmospheric pressure for July, 1884, determined from the tri-daily telegraphic observations of the Signal Service, is shown by the isobarometric lines on chart ii. The mean pressure for the month is greatest over the north Pacific coast region and along the coast of the Gulf of Mexico. As is usual during the summer months, an area of barometric minima occupies the middle and southern plateau regions, where the mean pressures are below 29.8. A second area of barometric minima is also shown over the Gulf of Saint Lawrence, where the pressure falls to 29.74 at Father Point, Province of Quebec. To the eastward of the one hundreth meridian the mean pressures decrease with the increase of latitude from 30.0 along the Gulf coast, to slightly below 29.9 in the extreme northwest and lake region, and to 29.75 over the Gulf of Saint Lawrence. The highest barometric means for the month occurred in the north Pacific coast region—Olympia, Washington Territory, and Roseburg, Oregon, reporting 30.04, and Fort Canby, Washington Territory, and Portland, Oregon, reporting 30.05.

Compared with the mean pressure of the preceding month an increase is shown over Oregon, Washington Territory, and northern Idaho; along the immediate Gulf coast, and in the southern portions of Arizona, New Mexico, and Texas. The increase is most marked on the north Pacific coast, where, at Portland, Oregon, it amounts to .10. In all other districts there is a decrease, the deficiencies being unusually marked from the lake region, upper Ohio valley, and middle Atlantic states to the Canadian Maritime Provinces. Over portions of the provinces of Ontario and Quebec and in New England the barometric means vary from .25 to .27 below those for July.

Compared with the normal pressure for the month of July, deficiencies are shown over the entire country. From the one-hundredth meridian westward to the Pacific coast the departures are generally less than .05, while to the eastward of the region named they increase to from .10 to .13 over a narrow area extending in a northeasterly direction from the Indian Territory and eastern Texas to New England.

BAROMETRIC RANGES.

The monthly barometric ranges are generally more than .50 over the northern districts from Idaho to Lake Huron, and in northern New England, the maximum ranges for the month occurring in the last mentioned district, where, at Eastport, Maine, the range is .71. Along the coast of California; from Arizona eastward to the Mississippi river, and in southern Florida, the ranges are less than .30, the smallest being .16 at Fort Apache, Arizona, and .19 at Brownsville, Texas, and Prescott, Arizona.

In the several districts the monthly ranges varied as follows:

New England.—From .46 at New Haven and New London, Connecticut, to .71 at Eastport, Maine.